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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,635	07/13/2001	Jacques Dubac	022701-941	1628

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EXAMINER	
PASTERCZYK, JAMES W	
ART UNIT	**PAPER NUMBER**
1755	

DATE MAILED: 05/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/903,635	DUBAC ET AL.	
	Examiner	Art Unit	
	J. Pasterczyk	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 July 2002 and 25 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) *1-10,15 and 16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-16* are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/23/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. This Office action is in response to the IDS filed 7/23/02 and the preliminary amendment filed 11/25/03.

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-10, drawn to "use" (sic) of perfluorosulfonic group-containing catalysts, classified in class various depending on what is made, subclass various depending on what is made.

II. Claims 11-14, drawn to perfluorosulfonic compounds, classified in class 556, subclass 1 et al. depending on the metal of the compound.

III. Claims 15 and 16, drawn to catalysts, classified in class 502, subclass 155.

3. The inventions are distinct, each from the other because:

Inventions II and III are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as a CVD precursor to deposition of the metal contained in the compound, and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Inventions III and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process for using the product as claimed can be practiced with another materially different product, such as aluminum trichloride.

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions, the former to alkylate aromatic rings, the latter to serve as a precursor to chemical vapor deposition of various metals.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Martin Bruhse, Esq., on 4/30/04, a provisional election was made with traverse to prosecute the invention of group II, claims 11-14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-10 and 15-16 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

7. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: It was not executed in accordance with either 37 CFR 1.66 or 1.68. The signature of inventor Peyronneau appears to be missing.

8. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. One of the errors known to the examiner is the lack of headings in the tables at the end of the specification; instead the word "illegible" is written. In addition, the word "lacuna" appears to be used instead of "rare" as in "rare earth metals" or in place of something else about p. 34 in the experimental section. Extensive proofreading for grammar, usage and spelling is also required.

9. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The present abstract is objected to since it gives numerous variables that stand for various functional groups without ever giving a concrete example or even the empirical formula for the compound as found in the claims.

10. Claims 11-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

From the structures in claims 11, 13 and 14, it appears as if the sulfonate group has a terminal oxygen with a charge on it; however, this appears to conflict with the specification, and also would require a counterion in order for the formulas to be compounds instead of anions. Apparently what should be done is make the sulfonates read simply as $-SO_3$ and note that the R groups are in fact diradicals, one end bonded to the metal, and the other end bonded to the sulfonate sulfur atom, unless the sulfonate groups are indeed bonded to the metals, in which case the matter in brackets in the formulas should be written in the reverse order as it not appears in the brackets in the formulas and the negative charges deleted.

Further in claim 11, x is undefined, "for giving Lewis acids" is functional language, "the carbon carrying the sulfonic functional group" lacks antecedent basis, and the "preferably and "advantageously" phrases are narrower limitations within the same claim, having the problems noted in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989). Note also, for

example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). The subscript 3-q on Y is inconsistent with M being "at least trivalent" since it admits of M being only trivalent with Y being only mononegative.

In claim 12, the variables Y, mu and zeta are undefined, "[lacuna]" (sic) should apparently be --rare--, and "advantageously in situ" and "advantageously chosen from" are again narrower ranges within broader ranges as noted in the paragraph above. Also, MY_u is not a salt since no cations and anions are present; instead it is a compound on its own.

Further in claim 13, it is not clear what is meant in l. 3-4 by "at least trivalent cationic form"; is the metal in at least a 3+ formal oxidation state? If so simply say so. Is the metal in a tricoordinate geometry? If so say so. That M is recited as "an element" is omnibus and overbroad since the specification only admits of M being particular elements, not any element. In l. 6 "the anion or anions" lacks antecedent basis since Y is not recited yet as being an anion, l. 8 implies that the sulfonates themselves are perhalogenated, and in l. 8-9 "the carbon carrying said sulfonate functional group" also lacks antecedent basis since R is not recited as being a carbon-containing group; in fact, R is not defined at all, nor is x.

Further in claim 14, in the last clause defining q, simply saying --q is 1 or 2-- would suffice, in l. 7 "the carbon" again lacks antecedent basis, the q negative charges on the formula again would make it an anion instead of a compound, and in l. 4-5 "preferably known for giving Lewis acids" is again indefinite.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Singh et al., Indian J. Chem., vol. 22A, pp 814-815 (hereafter referred to as Singh), Kawada et al., J. Chem. Soc. Chem. Commun., pp. 1157-1158 (hereafter referred to as Kawada), Desmures et al., Tetrahedron Letts., vol. 51, pp. 8871-8874 (hereafter referred to as Desmurs I) and Desmures et al., French patent 2 756 279 (hereafter referred to as Desmurs II).

Singh discloses the preparation of antimony tristrifluorosulfonate (p. 814, left column, third full paragraph). Kawada has a similar disclosure for lanthanide tristrifluorosulfonates (table 2), Desmurs I at p. 8872, l. 3-4, and Desmurs II at p. 33.

None of these references discloses a group 3, 13, or lanthanide metal trifluorosulfonate with less than three triflate ligands bonded to the metal.

However, since each of the primary references uses an excess of triflic acid to make their tristriflates, the routineer in the art would have believed that a lower stoichiometric amount of triflic acid or its precursor would have led to a metal with a lower number of triflate ligands bonded to it.

It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of the primary references with a reasonable expectation of obtaining a highly-useful group 3, 13 or lanthanide metal triflate with less than tris coordination of triflate anions to the metal that would still function as a Friedel Crafts catalyst due to its high Lewis acidity.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Pasterczyk whose telephone number is 571-272-1375. The examiner can normally be reached on M-F from 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached at 571-272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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5/7/04